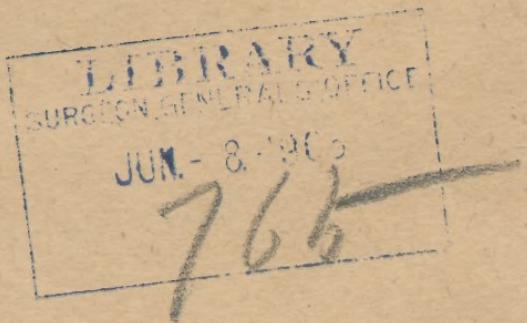
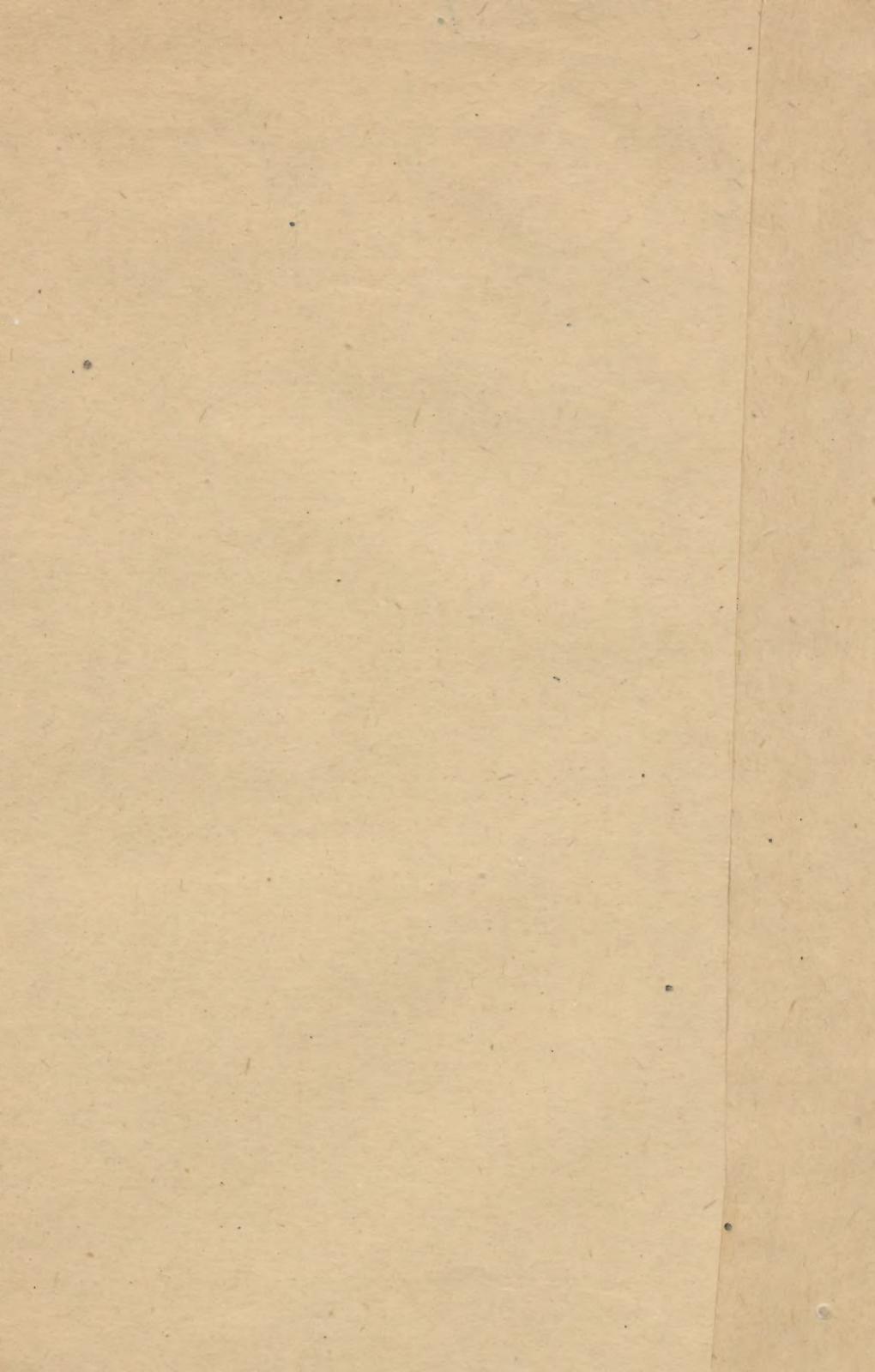


HEKTOEN (L.)

Carcinoma of the pharynx

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CARCINOMA OF THE PHARYNX, WITH EXTENSIVE AND ERRATIC CORNIFICATION.¹

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UNDER the microscopes are placed a number of sections of carcinoma characterized by an usually extensive and erratic cornification.—The tumor in question was removed after death from a man of about 45, who died in the Cook County Hospital. The revised *Anatomical Diagnosis* is as follows :

Carcinomatous ulcer in the left sinus pyriformis; metastatic growth in the right side of the neck and in the liver; lipoma of the stomach; diffuse bronchitis and broncho-pneumonia; purulent pleuritis; arteriosclerosis, and chronic nephritis.

The right half of the epiglottis and the adjacent pharyngeal mucous membrane were the seat of an irregular ulceration, whose margins were raised and notched, the floor containing larger and smaller yellowish points; the anterior margin extending down into the beginning of the esophagus. The ulcer measured about 6 cm. vertically and 3 cm. transversely, being of an oval outline. On the right side of the neck, one inch above the middle of the clavicle, was a firm, oval growth, about as large as a walnut, firmly connected with the deeper parts, the skin, however, being freely movable. Dissection showed that the growth was not connected with any of the adjacent muscles, that it was irregularly oval and nodular, of grayish color, but containing small masses of yellowish,

¹ Presented to the Chicago Pathological Society, January 10, 1898.



caseous-like material. In the right margin of the right lobe of the liver was a small, subcapsular district, composed principally of cicatricial tissue enclosing whitish or yellowish masses, the whole being about as large as a hazel-nut. Just below the gastro-esophageal junction was a small, oval mass in the submucous tissue of the stomach, which on microscopic examination proved to be a lipoma. The other organs did not present any changes of interest in this connection.

It is only proper to say that, on account of the similarity of some of these lesions to syphilitic changes, they were at first, before microscopic examination had been made, regarded as of syphilitic nature, and this was so stated in the original anatomical diagnosis. Perhaps the subcapsular area in the liver and the submucous mass in the stomach had the most to do with the formation of this diagnosis. Microscopic examination, however, showed the nodule in the stomach to be a lipoma, and the ulcer in the sinus pyriformis, the mass in the neck and the areas in the liver to be carcinomatous, although of an unusual structure because of the excessive hornification.

While the ordinary stains gave quite satisfactory results, it was, nevertheless, very fortunate to have at hand a reasonably reliable method for staining the horny material, namely, Gram's method. This useful method, first suggested for this purpose by Babes,² is, as recently shown by Paul Ernst, an almost specific stain for horny material. Ernst was first led to its use for this purpose in an effort to demonstrate horn in a flat-celled carcinoma of a bronchus.³ Subsequently he described his studies of hornification with Gram's method under

² Ueber einige pathologisch-histologische Methoden, *Virchow's Archiv*, 105, 1886.

³ Ein verhornirender Plattenepithelkrebs des Bronchus : Metaplasie oder Aberration ? *Ziegler's Beiträge*, xx, 1896.

normal and abnormal conditions in two articles⁴ in which special details may be sought.

It has been found that, generally speaking, the violet color given horn by Gram's method materially aids in recognizing beginning and limited hornification, and also in studying the relation of kerato-hyaline granules to the cell and to the fully-formed, more or less lamellar horny substance. In the present case the method brings out most clearly the unusual extent and lawlessness of the hornification in the tumors, whose nature, on this account, at first seems rather obscure.

As may be seen in the specimens, the growths consist of a connective-tissue stroma, with much small-celled infiltration, containing nests, columns, groups, and masses of rather small, compressed, flat epithelial cells, irregularly mixed with horny material, and also large and variously shaped districts, composed wholly of horn, of a wavy fibrillar, lamellar or scaly structure, and often surrounded by a zone of small round cells. Often very small groups of epithelial cells have been partly or wholly changed into horn and a few quite characteristic pearls are to be seen in the midst of connective tissue, showing that hornification has occurred in all the cells of the nest. Sometimes masses of epithelial cells are seen with cornification taking place at the periphery instead of the center.

In the growth in the neck (which occupies a group of lymphatic glands, and must, therefore, be regarded as a secondary, and not as a possible branchiogenous carcinoma), the erratic and widespread cornification is most well-marked. There are areas, corresponding apparently to a whole lymph-node, and occupying the major part of the sections, composed of irregular, scaly masses,

⁴ *Archiv für Mikroskopische Anatomie*, Band 47.

Studien über pathologische Verhornung mit Hülfe der Gram'schen Methode,
Ziegler's Beiträge, xxi, 1897.

which, in part, stain a diffuse deep-violet with Gram's method, in part remain unstained, or stain with the carmine or with hematoxylin. At other places the lymph-follicles contain, instead of small groups of carcinoma-cells, minute accumulations of horny material. In the mass in the liver the hornification has not been so extensive, but here also it has occurred in an anomalous manner. In the pharyngeal ulcer the hornification is also very extensive, and the resulting material has a much more concentric, parallel and wavy, fibrillar appearance than elsewhere. The surface of the ulcer is the seat of necrosis, and below there is marked leukocytic accumulation.

The study in the early stages of hornification in these specimens is not satisfactory. The unusual rapidity and extent of the process may account for the absence of or failure to find good intermediate stages. As Ernst has pointed out, Gram's method does not always stain everything that looks like horn and in these sections are also many places in which the horn-like material remains unstained.

The general lawlessness of carcinoma is, it seems to me, exceedingly well illustrated in the erratic and uncontrolled hornification in the primary and secondary foci of this tumor.



